

REMARKS

Reconsideration of the outstanding rejections is requested for the reasons that follow.

Claims 1, 11, 27, 36 and 56 were objected to as containing informalities with respect to Markush group language or as containing both "nonactivated" and "nonactivatable." Applicants submit that the claims as amended overcome the rejection.

Claims 1-11, 13-18, 21-23, 27-52 and 56-57 were rejected as indefinite for containing a broad and a narrow range within the same claim by reciting "chemically or biologically functional materials or building blocks," which the examiner interprets as a group or type of compounds, and then also "for said materials," which the examiner interprets as referring to a narrower group. The examiner also asserted that there is no antecedent basis for the term "carrier," since the previous recitation was a "biochip carrier." The examiner states that "at least partially removing materials" in claims 22 and 44 is unclear and indefinite. Claim 56 was considered unclear because the phrase "illumination pattern" has no antecedent basis. Applicants submit that claims as amended overcome the rejections. It is noted that the changes to Claims 22 and 44 do not change the scope of the claims.

Claims 1-4, 7-11, 13-17, 21-23, 46-49, 51 and 52 were rejected as obvious over the combination of Pirrung (U.S. Patent No. 5,143,854) and Derndinger (U.S. Patent No. 5,239,178). Pirrung is cited for disclosing an etched surface substrate with surface linker molecules having a photo removable protective group and an apparatus comprising a light source and a mask. The examiner refers to detailed steps for making the biochip using mask technology to produce light patterns, referring to the limitations in dependent claims. The examiner concedes that Pirrung differs from the invention by

failing to use an illumination matrix (diode array), detector and the step of detecting.

The Derndinger patent is a device for imaging in a focal plane and not an apparatus for making biochips. Therefore, it is submitted that this reference is not analogous art to the present invention or to Pirrung, and would not be considered by the person of ordinary skill because imaging by confocal microscopy does not have sufficient structural and/or functional overlap with biochip manufacture. The endeavor of the present inventors was to confirm by detection the proper illumination of "pixels" on a biochip carrier to ensure proper biosynthesis in the correct position. The device of Derndinger is not described as having the ability to monitor whether the illumination from the illumination grid falls on the correct position of the object being imaged.

Further, it is submitted that even though the object can be moved so that light falls on different areas and the individual light sources can be turned off or on, the Derndinger device is not capable of detecting whether a particular light source or the array of light sources is actually illuminating a particular location of the object and certainly not a predetermined location. The Derndinger device is designed to scan an object in three dimensions, not to selectively illuminate specific predetermined areas in a predetermined pattern without error. The purpose of adjusting the partial areas of illumination in the Derndinger device is to adjust the confocal effects of the object being observed, not to provide illumination to a specific predetermined area on the object. Therefore, *arguendo*, even if the references could be combined, that would not result in the present invention for the reasons explained above, and motivation is lacking to make the specific adjustments which would be necessary to obtain the present invention.

Moreover, it is noted that the claims as amended require the pattern to be adjusted to conform to the predetermined location-specific illumination identified in step (b), which is not clearly taught or suggested by prior art. Thus, for the reasons set forth

above, it is submitted that claims 1-4, 7-11, 13-17, 21-23, 46-49, 51 and 52 as amended overcome the rejection.

Claims 5 and 6 are considered obvious over the combination of Pirrung, Derndinger and Cerrina. Claims 5 and 6 depend from claim 1, and Cerrina fails to cure the defects of the combination of Pirrung and Derndinger set forth above; therefore, it is submitted that claims 5 and 6 as amended overcome the rejection.

Claims 27-41, 44 and 45 were rejected under 35 U.S.C. §103(a) as obvious over the combination of Pirrung and Derndinger. It is submitted that claims 27-41, 44 and 45 as amended overcome the rejection for the same reasons as those set forth in connection with the rejection of claims 1-4, 7-11, 13-17, 21-23, 46-49, 51 and 52 over the same references.

Claims 56 and 57 were rejected under 35 U.S.C. §103(a) as obvious over the combination of Pirrung and Derndinger. It is submitted that claims 56 and 57 as amended overcome the rejection for the same reasons as those set forth in connection with the rejection of claims 1-4, 7-11, 13-17, 21-23, 46-49, 51 and 52 over the same references.

Claims 1, 8, 14 and 16 were provisionally rejected for non-statutory double patenting over claims 1, 5, 6 and 35 of application serial no. 09/763,914. Applicants acknowledge that the provisional double patenting rejection can be raised before the provisional double patenting rejection is the only rejection remaining in one of the present Application and 09/763,914. On the other hand, it is noted that the double patenting rejection is only "provisional" in nature and there are still several other outstanding rejections in the present Application; therefore, it is submitted that Applicants will take an appropriate action such as filing a terminal disclaimer or traversing the double patenting rejection once the claims of any of the applications are

set, i.e, the provisional double patenting rejection is the only rejection remaining in one of the applications.

With regard to the Examiner's request of the certified copy of a priority document, German Patent Application 198 39 254.0 (filed on August 28, 1998), the requested copy is now in the mail to counsel and will be submitted as soon as received.

In view of the foregoing, it is submitted that the present application is now in condition for allowance. Reconsideration and allowance are earnestly requested. The Director is authorized to charge any fees or overpayment to Deposit Account No. 02-2135.

Respectfully submitted,

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